WISCONSIN STROKE PLAN 2005
Notification & Response of EMS for Stroke

A. Introduction

Notification/Response of EMS for Stroke: Ideal State
1. Processes that facilitate rapid access to EMS for patients with acute stroke are in place.
2. EMS dispatch uses the most current stroke treatment recommendations and dispatches EMS responders for strokes at the highest-level emergency response.
3. Emergency physicians are involved with stroke experts in the development of EMS stroke education materials; assessment, treatment and transport protocols for EMS providers. (This occurs nationally.)
4. All patients having signs or symptoms of stroke are transported to nearest primary stroke center.
5. EMS personnel can perform assessments & screening of patient for hyper-acute interventions.

The effective notification and response of EMS for stroke involves a complex interaction among the public, the applicable EMS programs and the relevant hospital emergency departments. Stroke patients or a bystander must recognize the signs and symptoms of stroke and the importance of calling the emergency response number (911 or equivalent) immediately to help initiate effective therapy as rapidly as possible.

EMS communicators (call takers and dispatchers) play a critical role in stroke recognition and determining the timing and type of EMS response to stroke. A systems approach can help implement measures that decrease the time from receipt of a call for a probable stroke and the dispatch of EMS personnel. In the absence of ongoing stroke-specific training and feedback, communicators may fail to identify a significant percentage of potential strokes even when callers spontaneously use the word “stroke” in communicating with the dispatcher.

Establishing programs that provide ongoing education for field EMS personnel to facilitate the accurate and rapid recognition of patients with acute strokes is essential to promote appropriate decisions involving the treatment, transport and destination of suspected stroke patients. Because EMS responders can frequently fail to identify strokes when support mechanisms are not in place, stroke recognition tools have been developed that assist EMS personnel in identifying patients with acute cerebral ischemia and intracranial hemorrhage with high sensitivity and specificity.

Recognition of stroke by EMS personnel is needed to guide both the transportation of patients to the most appropriate facilities and the initiation of stroke-specific basic or advanced life support prior to arrival at the hospital. Effective communication between EMS responders and receiving emergency departments is important in optimizing the efficiency of the hospital’s response to acute stroke. Time is saved when notification from EMS enables the emergency department to begin assembling the necessary personnel to treat an acute stroke patient. EMS responders and communicators also can play an important role in collecting information about the time of the onset of stroke symptoms. Such data can be essential to clinical decision making in the acute treatment of stroke.

There are potential benefits from coordinating air transport options with EMS to enhance stroke care. The use of helicopter-based transportation offers the potential to expand access to stroke therapies and services that are not widely available to patients in some rural and other neurologically underserved areas. When initiated quickly as part of a collaborative inter-facility system, helicopter-based transportation can reduce the time to emergency department arrival at hospitals that are equipped to treat acute stroke patients.

B. Current Status

Please rate Wisconsin's current status on *Notification/Response of EMS for Stroke* (on a scale from 1 to 5, 1 being poor (does not exist) and 5 being "ideal" state exists):

Processes in place for rapid access to EMS
Protocols match current recommendations

Transport to stroke center is norm

EMS personnel can assess/screen

1. **__3.0___ Processes facilitating rapid access to EMS** (Processes that facilitate rapid access to EMS for patients with acute stroke are in place.)

2. **__1.5 ___ EMS dispatch uses current treatment recommendations and highest-level emergency response** (EMS dispatch uses the most current stroke treatment recommendations and dispatches EMS responders for strokes at the highest-level emergency response.)

3. **__2.0___ ED physicians involved** (Emergency physicians are involved with stroke experts in the development of EMS stroke education materials; assessment, treatment and transport protocols for EMS providers.) (This occurs nationally.)

4. **__1.5___ Patients transported to nearest PSC** (All patients having signs or symptoms of stroke are transported to nearest primary stroke center.)

5. **__2.0___ EMS personnel perform assessments & screening for hyper-acute interventions** (EMS personnel can perform assessments & screening of patient for hyper-acute interventions.)

6. **__2.0___ Overall Score**

C. Inventory

List all of the assets and resources available to assist with the above recommendations.

Inventory of Notification/Response of EMS for Stroke Assets/Resources		
Organization (Source/Vendor)	Asset/Resource (Identify/Describe)	Assists with which Recommendation
Channing Bete | Laerdal | WorldPoint/ECC AHA	**American Heart Association - Stroke Prehospital Care With Continuing Education Hours (70-2253)** is an interactive CD-ROM designed to increase prehospital providers' knowledge about the two types of stroke and to demonstrate potential stroke-related complaints. It is a self-paced continuing education product that teaches the pathophysiology and risk factors of stroke as well as recognition, assessment and management of potential stroke. Through four interactive cases, participants are presented with patients who have stroke-related complaints and are prompted to make prehospital management decisions. This continuing education activity is approved by the Continuing Education Coordinating Board for Emergency Medical Services (CECBEMS). **Purpose/ Intended Audience:** Intended for use by prehospital care providers such as EMT-I and EMT-P.	#2
Channing Bete | Laerdal | WorldPoint/ECC AHA	**American Heart Association - Acute Stroke (70-2249)** is a continuing education product. This 50-page booklet is abstracted from Chapter 18 of *ACLS—The Reference Textbook. Volume I: ACLS: Principles and Practice* (70-2500) and provides a description of the symptoms, diagnosis and management of ischemic and hemorrhagic stroke and complications of stroke. It's for healthcare workers who, from the pre-hospital setting to the brain-oriented intensive care unit, treat suspected stroke victims. Purpose/ Intended Audience: For healthcare workers who care and treat suspected stroke victims. Accreditation: The American Heart Association (AHA) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The AHA designates this educational activity for a maximum of 1.75 category 1 credits toward the AMA Physician's Recognition Award. This program (03-NC-511) has been approved by an AACN-approved provider (11527) under established AACN guidelines for 2.0 contact hours, CERP Category A.	#3; #5
AHA/ASA web-site	**Training to use the NIH Stroke Scale available on-line** -- Proper and fast stroke assessment is critical to ensuring the best possible outcome for the survivor and their families. The American Stroke Association, in conjunction with the American Academy of Neurology (AAN) and the National Institute of Neurological Disorders and Stroke (NINDS) has developed this free, CME/CEU certified, online training program for healthcare professionals to learn or review how to administer the NIH Stroke Scale for acute stroke assessment, using training videos developed by the NINDS. The Stroke Scale assess motor, sensory, and visual impairments, on a scale of 0-42 through a physical exam and a series of questions. By using this, the health professionals can tell what type of an stroke the patient is having and where the clot in the brain is. Emergency physicians, neurologists, nurses, and medical students can use this FREE online NIH Stroke Scale education tool and receive: On-line training videos and testing, CME & CEU credits and automatically receive certificate online.	#3; #5
AHA/ASA	**Algorithm for Suspected Stroke and Cincinnati Prehospital Stroke Scale - Card (70-2231)** This two-sided, laminated, 8 1/2" X 11" four-color card illustrates the Suspected Stroke Algorithm on one side and the Cincinnati Prehospital Stroke Scale on the other. The card is sized to be placed on the wall of an ambulance or hospital emergency room area as a helpful reminder. Sold in sets of five. Purpose/ Intended Audience: For use by emergency medical technicians and healthcare providers who need a quick reference to the Suspected Stroke Algorithm and the Cincinnati Prehospital Stroke Scale. **Spanish ACLS Pocket Reference Card: Acute Coronary Syndromes and Stroke Pocket Card (70-2665)** Spanish translation of the ACLS Pocket Reference Card: Acute Coronary Syndromes and Stroke Pocket Card. This 8-panel,	

	laminated, folding card provides the algorithms common to acute coronary syndromes and stroke, the relationship of the 12-lead ECG to coronary artery anatomy, and appropriate treatment protocols. The card fits comfortably in a lab-coat pocket for quick and convenient access. Suggested Use: For use by healthcare providers who need quick reference to essential algorithms for advanced cardiovascular life support.	
AHA/ASA	**Algorithm for Suspected Stroke (4' X 6 ½') - Laminated Card 70-2556** This two-sided card contains the Cincinnati Prehospital Stroke Scale on side one and on the reverse side the algorithm for suspected stroke.	
AHA/ASA	**Acute Ischemic Stroke - Poster (70-2173)** Single 22" x 34" four-color poster with four sections, including: Algorithm for Suspected Stroke Screening Scales for Stroke Fibrinolytic Therapy Checklist for Ischemic Stroke Emergency Therapy for Acute ischemic Stroke and Hemorrhagic Stroke. Packaged unfolded. Purpose/Intended Audience: Adjunct to teaching or a resource for the healthcare site.	
AHA/ASA	**ACLS Acute Coronary Syndromes and Stroke - Pocket Reference Card (70-2511)** Eight-panel, folding, four-color, 4" x 6 1/2" card provides algorithms common to acute coronary syndromes and stroke, the relationship of the 12-lead ECG to coronary artery anatomy, and appropriate treatment protocols. Card is a joint project of the American Association of Critical-Care Nurses and the AHA. Purpose/ Intended Audience: Quick reference for ACLS healthcare providers.	
AHA/ASA	E911 policy initiatives (advocacy team)	
AHA/ECC	AHA Training Courses - ACLS, ACLS Experienced, BLS, PALS	
Priority Dispatch Corp. www.prioritydispatch.net	The National Academy Field v11 Responder Guide-Medical Priority Dispatch System—"this guide is intended to provide EMS and Public safety responders with access to the National Academy EMD Protocol Responder Codes and determinant descriptors, to improve participation and quality in emergency medical dispatch". Purpose/Intended Audience: Firefighters, EMT's, Police Officers, Ambulance Officers and Paramedics. (Currently Stroke/CVA as identified under tab #28 in this field guide is Dispatched only as an "Alpha to Charlie" response).	#1, 2
Waukesha County EMS	Waukesha County EMS Guidelines/Standards of Care (3/10/03) – Guideline #414, Protocol/Guideline, standard of care re: Stroke/Cerebral Vascular accident/transient ischemic attack.	#3
Kansas Stroke Coalition -Kansas Rural Stroke Prevention Project, Box 755, Hays,KS 67601 (785)-628-1208	Brain attack Clinic Facility Transfer Checklist – Kansas Stroke Coalition— EMS transport checklist for stroke patient transports.	#3,4,5
University of Miami, Center for Research in Medical Education	Miami Emergency Neurological deficit (MEND) pre-hospital checklist – EMS transport checklist/form to document stroke patient data for transport.	#3,4,5
Ninds.nih.gov	The National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD. – Numerous resources, forms, data, etc. relating to all aspects of stroke and stroke prevention.	#2,3,5
www.WisconsinEMS.com	"Working Together"- Midwest Emergency Services Conference and Expo. Presented by WEMSA – Wisconsin Emergency Medical Services Association. Held the last week of January annually – hosts numerous seminars regarding a wide range of topics including stroke/neurological emergencies.	#2,3

D. Assessment for *Notification/Response of EMS*

Information and quotes provided from an interview with Dan Williams, EMS Section Chief, Office of EMS, DPH, March 7th and April 7th, 2005.

Goal 1:	**A stroke system should include processes that provide rapid access to EMS for patients with acute stroke and that dispatch EMS in the shortest time possible, given local resource availability.**

Strategy 1: Ensure that the public has ready access to EMS through enhanced 911 accessible thorough both landline and wireless telephones.

Enhanced 911 (Landline)

- Every county in the state (72 counties) has enhanced 911 on the landline.

Wireless E911

- Was to be in place 5 years ago but no mandate, no money in place, no funding.
  - ***Now there is funding through a surcharge on 911 on phone bills that will make this happen. County answering points that are going to have it will have completed it by the time the money runs out.***
  - Process? Answering points apply to the public service commission for the money as a grant; a plan needs to be in place for how the project is implemented. Some areas have their own dispatch center for their community but the 911call is transferred to them from the county answering point. The public service commission will aggregate the total cost of operation in the state and what it's going to cost to upgrade all the equipment and divide that by the number of wireless phones and that will be a surcharge on each bill.
  - There are an unknown number of (PSAPs) public safety answering points in the state across Wisconsin's 72 counties.
- ***Probably a one to three-year process (2005 – 2008) for the remaining areas.***
- Only one county with wireless E911in place, Waukesha County.
- Dane County may have wireless E911 by fall.
- Milwaukee County has just designated the Sheriff's Dept as the main answering point for emergency cell phone calls (there had been debate over the city or county handling the calls). The designation was needed by April 1 or the call center would lose state funds. The designation allows the Sheriff's Dept to upgrade its equipment to pinpoint the location of emergency calls made on cell phones. There is some discussion that the county could become a regional call center for southeast Wisc.

Ideas for Action:

- Promote urgency in moving forward in making the designation, obtaining funding and completing equipment upgrades.

Strategy 2: Ensure the nearest appropriate EMS response unit is dispatched immediately.

- **453** EMS services in Wisconsin.
- The issue of response walls: In Wisconsin, you can have dispatch done quickly but it may not be the closest response unit. There are boundary lines to EMS districts and the lines are not crossed even if there is an emergency right across the line.
  - This issue is present for every call that goes out. It is realized this is not the most efficient in expediting response.
  - There is history for some of the things that have gone on and some of that is the hard part to overcome.
  - In other areas of the state, districts will never budge from the system that is in place. Some areas will be open to discussion.
  - Having a stroke plan in place will help; EMS people by their nature certainly want to do the right thing.
- Dane County since last year has been working on a pilot project for critically injured patients to send the closest appropriate available unit and that unit may cross EMS lines.
  - This is more of a paramedic level that would be moving across the county line.
  - Recommendations recently made to extend the pilot and make it their policy for the closest appropriate ACLS unit to respond.
  - "This is a great thing in Dane County that they're building a project that works. Other people will point to that and say, "You could do it there" … in a county that's very political and has all kinds of other issues, they are able to overcome that to do this. So that's a great thing."
  - Is there a forum where Dane County EMS could present their pilot project and the outcomes from it?

        - Yes. There are conferences that EMS people attend throughout the year. "My sense is just, again, knowing how people can look at agenda items and things like that. Would this be a topic that people will grab onto as an agenda that's going to draw a hundred people to come in the conference? I don't know. Would they not do it? I don't know that either. But, again, it's new; it's different so that's the good point. People would be willing; it's not the same old little thing that you've heard every year at the conference."
        - It isn't necessarily the EMS community; it's the dispatch and emergency management. Dispatch is specifically more law enforcement oriented, which is different. WI has an association (NENA). They have their own conference in the fall. They potentially would be interested in something like this. They are always looking for people to present; they do a lot of breakout sessions. "So again, it's not a hurdle that can't be overcome but it's a very big problem."
- Is there a plan in place from the EMS side of things to look at these issues? Or is everything set and you're just working with what you have?
    - It's a very rural state. Every local government will tell you all the time, "we're going to do what we want to".
    - Every service is obligated to submit to our office an operational kind of plan on how they operate their service. Certainly, when we see those, we suggest, "Maybe you should consider this, you should consider that", so we do have an opportunity to reflect a little bit our will on them, but we don't have any authority in something like this to say, "You will call, you will make arrangements in this area to cover the closest service."
        - We just don't have that authority as a rule. We could certainly suggest that that makes sense and some people will say, "You're right. I want to make that change."
    - But we're gaining a little bit of ground. Even though the local service may not allow for the neighboring service to come in initially with intercept agreements, things like this are going on. If you have a basic unit here, there's an advanced unit over there, there's more interaction between those units now so they're getting there quicker than they used to a couple years ago.
        - So there are things changing -- but it's not changing as rapidly as we would like.

Ideas for Action:

- Promote the Dane Co pilot at EMS meetings and other venues to influence change over time for closest EMS district to respond and transport;
- Promote speakers on behalf of stroke to advocate for change to the current system;
- Gain the support of influential stakeholders, like PAC for example, to advocate for change.

Strategy 3: Develop goals for the time period between the receipt of the call to the emergency response number and the dispatch of the response team.

- ***Status: "I really think that most people are doing this pretty well. There are policies in place for how long the call can sit with the call and they QA that pretty carefully. I think that there are no significant delays in the time of call comes in until it's dispatched."***
- ***Issue of awareness level: The understanding that stroke care is now considered to be an emergency.***
    - ***Five years ago we were being told even by our medical directors that the damage is done, it's not a red light call -- that mindset is still out there.***
    - We need to figure out a way to educate people to get them to understand that this has changed.
- ***Issue is compounded by the reality of the geography of WI where 80% of WI EMS services is volunteer and in rural areas.***
    - ***We don't have any protocols for how to move the person in these rural areas in any kind of a timely fashion.***
        - ***We have people who have 35 to 45-minute response times to get to the patient and then an hour to the nearest hospital.***
            - ***Those areas can't fit into this model. They're going to miss all of the critical benchmarks for having an intervention. Truly for them, that really is we have a stroke and you're done.***
            - ***The further north, the farther apart the services are, and worse are the response times.***

Ideas for Action:

- ***Promote educational messages to dispatch and EMS response districts that stroke is an emergency etc;***
- ***Work to improve the call to dispatch protocols for rural areas of the state (invoke the trauma system's support of flight for life for stroke transport);***
- ***Advocate for the development of goals, the collection and tracking of data relating to the receipt of call to response team dispatch (for stroke).***

Strategy 4: Monitor adherence to the goals (strategy 3) and implement process changes as needed.

- Is data available on the time of the receipt of the call to the time of dispatch to the time of emergency response? Is this data collected?
    - Meg Taylor: This question asks if there is a surveillance system that's up and running here and there is not. There's not an ambulance run data system.
        - We have just purchased the trauma registry, which we'll give us at a little bit of trauma, but there is no data system that exists, trying to get it to happen.
- Mary Jo Brink: CVH Program has submitted a basic implementation grant to CDC with funding to support the Get With The Guidelines PMT for stroke for hospitals which may get at some of that EMS stuff because that's the front end of what has to be collected. From that we want to come up with a registry. We're going to look at working with 50 small hospitals in the first year. This year and next year, we want to pick up the rest because of grant funding.
    - There are like 34 elements that we'll be collecting with the basic tool. The tool was developed through the American Stroke Association and Outcome Sciences that was the company that developed the tool.
- ***Meg Taylor: The bigger question is: Instead of setting up another registry, make it part of an ambulance-run data system with a separate module if you're asking questions outside of our data system. I think that's a better thing instead of a separate registry on this particular line of 50 hospitals.***
    - ***We're working hard to get a standardized data set package together so that we can actually get a request for proposal to develop an ambulance-run data system. Our problem is cash.***
- Mary Jo: We're not duplicating anything. Maybe take the data elements from the Get With The Guidelines and merge them with yours to see where we are at.
- The ambulance-run data system, is it state wide and is it voluntary?
    - Meg: We can't mandate, but it would be voluntary and certainly, we're hoping that it will be statewide.
    - Dan: The rule allows us to mandate that we can get data from services but we have to be careful … pushing it on the edge. Some services don't have computers.
- Jeff: That is something ultimately, a legislature could mandate, that they report like the cancer registry.
- Meg: For a dollar a vehicle, we could have a very strong EMS system in the state.

Ideas for Action:

- Continuously monitor and report to the WSC on the state's progress toward the development of a data system for Wisconsin that would monitor eventual adherence to dispatch to response goals.

Goal 2:	**A stroke system should promote the use of diagnostic algorithms and protocols by EMS dispatchers that reflect the most current stroke treatment recommendations and should dispatch EMS responders for suspected strokes with the most rapid emergency response and within the same time limits/goals established for other acute events (eg, AMI and trauma).**

Strategy 1: **Ensure that EMS communicators have stroke education materials such as stroke guide cards available to assist in recognizing signs of stroke.**

- In the larger population areas of the state, how would we get the message out to the dispatchers or to the dispatch center so that we could raise the level of awareness that they need to have guide cards for stroke?
    - WI NENA (Dan can get contact information…the Rock Co dispatch director is their president, Dave Sleeter. He could help get that out.)
        - If you were to send this information through that group, I think we would get a fairly large acceptance of the people using it.
- We would certainly like to have every dispatcher be emergency medical dispatch qualified in giving pre-arrival instructions.
    - Now is not a great time to do that because they're implementing this wireless project and they're really saying, "I can't do any more than I'm already doing, I've got all those people going to training already." Timing is terrible for us on that topic right now because EMS Advisory Board would like to push that project through and that would be mandatory. But they also know that the time is not perfect to do that.
    - ***Now, I'm not sure how many programs are in place. I think somebody was doing a survey on … how many 911 dispatch centers in Wisconsin are giving pre-arrival instructions. When people give an operational plan to us, we ask them, "How are you dispatched?" and "what protocols are in place?" and "Does your county get pre-arrival instructions?"***
- ***The EMD is really two components.***
    - ***One part of it is the closest and the right people and the other part is the pre-arrival instructions. And a lot of people in Wisconsin will say "I don't have to worry about the priorities and instructions, since there is only one EMS service. So I don't have to think about it." Those were the issues.***

Regarding EMD:

- Do you know our laws in Wisconsin such that if somebody is trained and if you have a certified EMD, are there liability issues that prohibit them from giving pre-arrival?
  - No.
- I was reading on those states where what they did is kind of a progression, so to mandate a certification, what they did is change the liability laws in a way that protected and encouraged EMD certification.
  - Certainly, the argument that you will hear is that we don't want to do that because we're going to be sued for giving that information out.
  - So the programs about a medical director involved and are involved with the protocols and all of that, are certainly much better than the ones that are just grabbing somebody's material and giving those instructions.
- The public expectation now is such that they expect that that was going to happen. When they call 911, they expect somebody's going to help and tell them what to do. So it may be more of a liability issue … or not, but I think that's starting to be the conventional wisdom out there is that if you're not doing something, you're probably more liable than if you are…
- We are also working with Dr. Marv Birnbaum on a dispatch certification program through the co-lab at the university, and using it as the pilot for—what is it? It's not distance learning anymore. It's called something else. … of learning or something, and again, that might be a tie-in for you.

Ideas for Action:

- Seize opportunities for NENA distribution for educational messages and presentations at NENA meetings/conferences and other venue opportunities for education on stroke signs and symptoms and stroke as a medical emergency;
- Promote education on the movement to stroke systems of care and the state-wide changes taking place to communications/dispatch to encourage a new understanding of why this is important;
- Advocate for every dispatcher to be emergency medical dispatch qualified in giving pre-arrival instructions for stroke.

Strategy 2: Ensure that EMS responders use and are trained on validated scales (eg Cincinnati, Los Angeles, or similar scales) to aid the rapid and accurate identification of stroke patients.

- We can certainly make sure that in every EMT refresher classes given this year in the state everybody gets some of the Cincinnati Pre-hospital Stroke Scale cards.
  - That's easy and there's a 15-minute explanation by the instructor on why it's important and you have people filling up paperwork forever.
  - If there's new information they are going to absorb it, the new protocols are happy to involve with it and do what they can. It's just the matter of sometimes the execution is flawed, but it comes off in the end.
  - ***How many people will then say, "Yes, I'm happy to do all of this"?***
    - ***Maybe a quarter, maybe an eighth of the state is where this will really matter (the larger population areas).***
    - ***Protocols won't be in place anywhere else. Or for a change to really take place. Because they know it is too rural, it's too long to response. In the rural areas it becomes EMS persons saying I'm sympathetic to the cause but it's not going to matter because we're not going to get anybody to an appropriate center in the right timeframe.***
- We can make huge strides if we can change the mentality to make sure people understand that stroke is truly an emergency.
  - Five years ago, I can remember a medical directors saying, "It's just not. Don't waste your time. Don't waste the resources. Don't put yourself in jeopardy." So we need to change the mindset; this would be a huge change in people's minds.
- And then understanding why it's important.
  - In the more populous areas this will have a substantial change and an impact in the results we have.
  - Will it matter in rural Wisconsin? No. But it will matter a lot in those areas where the bulk of the population is.
- This stroke thing has gotten so bad over the last few years that the word "stroke" was taken out of all the textbooks. You couldn't even say the word "stroke" anymore in your class, according to the curriculum it was altered mental status. So it's not even a topic that you talk about individually anymore.
  - In the courses that I've always taught, that didn't bother me. I still taught about stroke because that's—people will need to understand that. But if you look at the textbook and look up stroke in the references in the appendix, it was in the book, you won't find it. There are more than just issues from Wisconsin that we have to deal with. These are national textbooks.
- We have a Web site and we could certainly publish that kind of information. There's an online class and we would maybe even try to work to give certain CME education approach approved for it through the national registry.

- Mary Jo: On your website can we also post information dealing with Wisconsin Stroke Alert day on May 5th?
    - The website so far has not been used in that fashion.
- The message needing to be heard: we have requirements on the number of hours that EMTs have to have to be re-licensed every two years.
    - We are pushing up against 50, 60 hours of really wonderful training in a system that is only mandating 30. The volunteers are saying that's too much. We can't be away from our job for 30 hours.
    - What are some alternatives? And so that's the problem when we have public health preparedness pushing at them with this new NIMS responsibility that they have to all be NIMS trained.
    - So it's a huge deal. … is just fitting all of that in technology and it's huge.
    - So alternative ways of—you talk a lot about Squad's actually having in-services. This could be simple a simple in-service rather than looking at…
    - This is the kind of program that we could put together and send out through our office as an education component to do at their monthly Squad meeting. ... we're going to have much more success doing that and to try to put … in terms of canned curriculum.
- I would suggest that we get you on the Physician Advisory Committee agenda to make the presentation to them and get suggestions from them on how we can work with the medical directors.
- ***We can send information from our offices (Office of EMS) for EMS services.***
    - ***We are in contact with the services all the time. So there are things that we can say, "Here are some new initiatives, here are some things you should be …"***
    - ***We're also in contact with all of the training centers and we can suggest to them and they'll tell us that we already have 30 or more hours on our educational programs and you can teach right now.***
    - ***But there are ways to get some of this information out there, which is probably better than where we are now where we're not getting information out.***
    - Virtually, every conference that's going on EMS-wise in the state this year, for sure, I'm speaking at. I could certainly make sure information gets distributed to everybody.
- A group mentioned earlier was ACEP.
    - They don't really have much impact on EMS, unfortunately.
    - You would have to have something more active and have more impact, but they have not taken that up as a priority, and not to say that they don't have some impact, because I think they get it through some of the physicians that we have on our advisor committee, but things coming from them directly is pretty nonexistent.

Ideas for Action:

- Make Cincinnati Pre-Hospital Stroke cards and other stroke education materials available at every EMT refresher course given next year and a 15-minute explanation by the instructor on why it is important;
- Promote on-line training tools for EMS on stroke through the Office of EMS web-site and work to offer credits through the national registry;
- Encourage EMS districts to provide education on stroke;
- Seize EMS conference and other venue opportunities (see above) for education on stroke signs and symptoms and stroke as a medical emergency to influence change of the mindset on stroke;
- Promote education on the movement to stroke systems of care and the state-wide changes taking place to EMS response to encourage a new understanding of why this is important in all regions of the state.

Strategy 3: Ensure that each local and regional EMS component within Wisconsin determines goal response times for suspected stroke patients that are tailored to the local or region's resources and infrastructure (balancing the availability of different level of responders and the need for rapid transport to an appropriate hospital).

- Currently a minority of dispatch centers is well-attuned to stroke signs.
- A small number of dispatch centers have "canned, pre-hosp assessment criteria" that is used for pre-arrival instructions or a book
- Difficulty arises with small dispatch centers of one dispatcher on a shift – it becomes a time issue to get into depth as you could with a larger dispatch center and more people to cover calls – there is an obligation to answer all calls
- One person dispatch centers with responsibility to be the 911 answering point are decreasing and where it is present it may be on 3rd shift where there is one person only. One-person centers have the responsibility to screen the calls because it is the receiving end of the call.

- Most computerized dispatch programs are vendor products – some have their own such as UW. Stroke may be an option, an add-on for additional cost that is a barrier.
- The philosophy or mindset is changing in that there is an expectation from the public -- they expect to have this information available so it may not be the first throw away when computer program options are being considered; "there is more liability if we don't do something as opposed to if we do"
    - *0 – 85% of dispatcher workload is law enforcement and 15% or so is fire/EMS
    - Where you have civilian dispatchers as opposed to sworn deputy dispatchers there is more acceptance – dispatch for deputies is more the "penalty box". For civilian dispatchers, it is what they want to do – the care factor is higher. This will have a huge impact on how successful this will be.
- High turnover in dispatcher jobs – not very well paid and very stressful – someone is constantly in training, they are short-handed and working 10-12 hr shifts.
- Setting goal response times for stroke patients will be very local/regional – no one number will fit state-wide. Local/regional areas will come on board with goal # over time not all at once. It is important to emphasize that it will be determined regionally. It will be very important to have stroke treated as an emergency then the response rate will improve. Response rates in small more rural communities will always be longer than urban areas. Changing the mindset that stroke is truly an emergency will have a huge positive impact.

Ideas for Action

- Send a packet of information to each dispatch center (known public safety answering points) might increase to 50% or higher interest and action in moving to assessing for stroke – a step in the right direction.
    - Work through the Dept of Justice, Div of Criminal Investigation, Training Division – it will get more attention than being sent from EMS.
    - Provide one-page laminated sheet for stroke.
    - Package message as a good health intervention ("we are trying to add value to what you do") not "the state telling them one more thing to do".
    - Use a scenario story (relate a family story and a successful outcome) in relating the value of the message, and relay the outcome when it is handled correctly, make it more personal.
    - Having stroke treated as an emergency will increase response rates.
- Work with DOJ (they do the training for dispatch) to make stroke a training segment for dispatchers – 15 or 20 min of training of their 10 hrs of training – make it burden-less and this might attract an audience.
- Survey to identify what computerized programs dispatch centers are using, what they are and if stroke is a part of the program.

Goal 3:	**A stroke system should ensure the direct involvement of emergency physicians and stroke experts in the development of stroke education materials, communication and field assessment protocols, treatment protocols, and transport protocols for EMS providers. Such training and protocols should focus on stroke recognition, triage/transport decisions, and early notification to the receiving hospital.**

Strategy 1: **Ensure that frequent and meaningful dialogue takes place among the pre-hospital providers, ED directors, and stroke center directors regarding operational issues and collaborative educational efforts.**

Strategy 2: **Determine and deliver the initial and continuing education needed to provide optimal patient care.**

- The EMS person is the easiest to change because they want to do what is right. They will seize the newer information, and better ways to do something – they will grasp and run with that. That's where sending out things from the EMS office will be beneficial.
- It adds up to building baseline education right now – trying to get people to a place where they understand what's occurring with stroke systems of care changes across the state and that this group of patients – stroke – should be treated in a certain way. In time this will become part of the model.
    - It's an uphill climb from 5-6 yrs ago when the stroke patient was deemphasized.
    - The EMS side will be the easiest to "crack", the dispatchers will be the hardest.

Ideas for Action:

- Sending out a package to EMS with "a new protocol, here's a sample and how to evaluate these patients, here's a sample for that. They'll be lined up, I can guarantee you, they'll be lining up in their policy and procedure books."
- Dan will present to 7-8 major groups over the year and will include 2/3 slides in his PPT presentation and provide him with handouts.

Goal 4:	**A stroke system should ensure that all patients having signs or symptoms of stroke be transported to the nearest primary stroke center (or hospital with an equivalent designation), given currently available acute therapeutic interventions. Air transport should be considered to shorten the time to treatment, if appropriate. Stroke patients who are not candidates for hyper-acute interventions should be evaluated at the closest hospital and considered for transfer, if appropriate, to a primary stroke center or other facility through established referral processes.**

Strategy 1: **Strategies will need to be developed based on the white paper commentary provided on page 6.**

- Several audiences need to be brought on board (political issues to overcome):
  - This is potentially an area that could be a little more difficult and we are going through that right now with the trauma system. City/local ordinances also need to reflect and support system changes…
    - **"We have triage and transport dialing off of the trauma system and we didn't think that that was going to be that big of a deal and it is turning into being a nightmare because … you can't tell me where to take my patient kind of thing. And we're really saying, we're not talking about 98% of your patients. We're talking about that 2% that really need to be in a trauma center. That's what this protocol is for."**
    - There are places where city/local ordinances do not permit transport out of local area. In these cases they have to transport to the local hospital and then transport out to another hospital.
  - Medical directors for EMS services also have a say in where their patients of the service go.
  - Hospitals themselves weigh in on decisions as it affects their revenues.

Ideas for Action:

- Be aware that city/local ordinance will need to change to reflect and support systems developments. Other things need changing too when you change triage and transport destination-type changes.
- Raise awareness that PSC exist and they are the best place for patient care .. and build this into every aspect of the system .. eventually people understand and feel this makes sense. Start from "what's best for the community and for your service". Down side is it may be a slower process. This is a process and it has to build momentum. EMS advocates can be a very strong component but need to educate them and win over their support. A bottom up approach is slower but most effective in education.
- Include in the education component that PSC are happening and JCAHO accreditation.

Goal 5:	**A stroke system should ensure that EMS personnel perform and document agreed upon stroke patient assessments and screening of candidates for thrombolysis or other hyper-acute interventions, as such interventions become available.**

Strategy 1: **Ensure that all potential stroke patients be scored and screened for stroke signs and symptoms, time of onset, and contraindications to thrombolytic therapy or other hyper-acute therapies that may become available through completion of forms or other methods (as agreed upon by the local stroke community in collaboration with EMS) to provide written or transmitted data to the receiving hospital.**

Strategy 2: **Ensure that scoring and screening tools are a part of a comprehensive quality improvement program and be improved and refined as needed.**

- This goes back to baseline education and giving them the tools.
- EMS office can be very proactive in information getting out and in bringing influence to the training centers, the service providers and to some extent the hospitals themselves.
  - In Sept work with training center refresher classes.

E. Action Plan

Wisconsin Stroke Plan
Notification & Response of EMS
2005 - 2007

Goal 1:	**Include processes that provide rapid access to EMS for patients with acute stroke and that dispatch EMS in the shortest time possible, given local resource availability.**

Strategy 1: Ensure that the public has ready access to EMS through enhanced 911 accessible thorough both landline and wireless telephones.

#	Objectives	Action Steps	Timeframe
1.1A	**Encourage PSAPs/dispatch centers to move forward to obtain available funding and complete equipment upgrades for wireless E911; assist as possible.**	• Work with Wisconsin Public Service Commission to promote availability of funding and information available. • Encourage sharing of information at educational venues across the state by PSAPs completing the process.	2005-07

Strategy 2: Ensure the nearest appropriate EMS response unit is dispatched immediately.

#	Objectives	Action Steps	Timeframe
1.2A	**Promote the Dane County pilot project for presentation to influence change over time for the closest EMS service to respond and transport.**	• Engage Dane Co. to present their pilot project around the state at EMS and NENA state conferences and local meetings. • Secure opportunities for Dane Co. to present at EMS and NENA state conferences and local meetings.	2005-07
1.2B	**Educate and advocate for change to the current system.**	• Recruit advocates and train speakers. • Secure speaking opportunities at EMS and NENA state conferences and local meetings. • Work with the EMS Alliance as a resource for education and training.	2005-07
1.2C	**Gain the support of influential stakeholders, like PAC for example, to advocate for change.**	• Communicate with the EMS Advisory Board and EMS Physician Advisory Committee keeping them appraised of stroke systems developments and implications for dispatch and EMS. • Work with the EMS Alliance as a resource for education and training.	2005-07

Strategy 3: Develop goals for the time period between the receipt of the call to the emergency response number and the dispatch of the response team.

#	Objectives	Action Steps	Timeframe
1.3A	*Raise awareness among PSAPs/dispatch centers and EMS services that stroke is now considered a medical emergency.*	• Promote educational messages to PSAPs/dispatch centers and EMS services that stroke is a medical emergency etc. overcoming past messages where stroke was not considered an emergency.	2005-07
1.3B	*Engage rural areas and EMS volunteer services in rural areas to address (plan) for how they may improve response times.*	• Encourage rural areas to use the trauma system's support of flight for life for stroke patient transport.	2005-07
1.3C	*Advocate for the development of goals and the collection and tracking of data relating to the time of incoming call to response team dispatch for stroke.*	•	2005-07

Strategy 4: Monitor adherence to the goals and implement process changes as needed.

#	Objectives	Action Steps	Timeframe
1.4A	**Support the development of a surveillance system or ambulance run data system.**	• Continuously monitor and report to the Wisconsin Stroke Committee on the state's progress toward the development of a data system for Wisconsin that would monitor eventual adherence to dispatch to response goals. • Ensure collaboration on the development of the stroke registry and the ambulance run data system so separate systems are not created. • Encourage that reporting to the ambulance run data system is mandatory and state-wide.	2005-07

Goal 2: Promote the use of diagnostic algorithms and protocols by EMS dispatchers that reflect the most current stroke treatment recommendations and should dispatch EMS responders for suspected strokes with the most rapid emergency response and within the same time limits/goals established for other acute events (eg, AMI and trauma).

Strategy 1: Ensure that EMS communicators (PSAPs/dispatch centers) have stroke education materials such as stroke guide cards available.

#	Objectives	Action Steps	Timeframe
2.1A	**Raise awareness and educate PSAPs/dispatch centers on stroke signs and symptoms and stroke as a medical emergency.**	• Distribute signs and symptoms and stroke is a medical emergency, call 911 educational messages to all EMS PSAPs/dispatch centers and present at NENA conferences and meetings and other venue opportunities throughout the state. • Work with the EMS Alliance on education and training.	2005-07
2.1B	**Distribute stroke guide cards.**	• Develop and distribute stroke guide cards to PSAPs/dispatch centers and at conferences and meetings.	2005-07
2.1C	**Educate PSAPs/dispatch centers on the movement to stroke systems of care, primary stroke systems and statewide changes taking place to encourage a new understanding of why it is important to assess and dispatch stroke as a medical emergency.**	• Provide presentations and resources on stroke systems and primary stroke center developments and on-going systems change updates and changes occurring throughout the state. • Work with the EMS Alliance on education and training.	2005-07
2.1D	**Advocate for every dispatcher to be emergency medical dispatch qualified in giving pre-arrival instructions for stroke.**	• Collaborate with the WI Advocacy Committee and provide support to their initiative.	2005-07

Strategy 2: Ensure that EMS responders use and are trained on validated scales (eg Cincinnati, Los Angeles, or similar scales) to aid the rapid and accurate identification of stroke patients.

#	Objectives	Action Steps	Timeframe
2.2A	**Promote validated scales and stroke materials to EMS responders.**	• Distribute Cincinnati Pre-Hospital Stroke cards and other stroke education materials at every EMT refresher course given next year and a 15-minute explanation by the instructor on why it is important.	2005-07
2.2B	**Promote on-line training tools on stoke for EMS service responders through the Office of EMS web-site and work to offer credits through the**	• Provide training tools for stroke for posting on the CVH website; work with the EMS Aliance for education and training. • Develop a communication plan to promote to EMS services.	2005-07

	national registry.		
2.2C	**Encourage EMS services to provide education on stroke.**	• Engage WI EMS services to support available educational opportunities on stroke by EMS responders. • Collaborate with EMS Alliance for education and training.	2005-07
2.2D	**Seize opportunities in all regions of the state to influence change on the current stroke mindset and encourage a new understanding of why this is important in all regions of the state.**	• Develop a concise powerpoint presentation on stroke (signs and symptoms, stroke as a medical emergency, movement on stroke systems of care, on-going systems change developments etc.) for presentation at EMS services venues (EMS conferences and training sessions) throughout the state.	2005-07

Strategy 3: **Ensure that each local and regional EMS component within Wisconsin determines goal response times for suspected stroke patients that are tailored to the local or region's resources and infrastructure (balancing the availability of different level of responders and the need for rapid transport to an appropriate hospital).**

#	Objectives	Action Steps	Timeframe
2.3A	**Raise awareness among PSAPs/dispatch centers of the importance of assessing for stroke upon call intake and the value of securing certain data elements.**	• Encourage the Dept of Justice, Div of Criminal Investigation, Training Dept. to make stroke a training segment for dispatchers. • Provide one-page laminated sheet for stroke. • Package message as a good health intervention ("we are trying to add value to what you do") not "telling them one more thing to do". • Use a scenario story (a family story and a successful outcome) in relating the value of the message, and relay what the outcome was when handled correctly to make it more personal. • Assist DOJ in developing training segment for dispatchers (15 or 20 min of training of their 10 hrs of training).	2005-07
2.3B	**Identify PSAPs/dispatch centers using computerized programs, what program is used and if stroke is a part of the program.**	• Survey PSAPs/dispatch centers across the state.	2005-07

Goal 3: **Ensure the direct involvement of emergency physicians and stroke experts in the development of stroke education materials, communication and field assessment protocols, treatment protocols, and transport protocols for EMS providers. Such training and protocols should focus on stroke recognition, triage/transport decisions, and early notification to the receiving hospital.**

Strategy 1: **Ensure that frequent and meaningful dialogue takes place among the pre-hospital providers, ED directors, and stroke center directors regarding operational issues and collaborative educational efforts.**

#	Objectives	Action Steps	Lead Organization(s) and Partners	Timeframe
3.1A	**Work with WSC Acute Stroke panel to encourage dialogue and training between pre-hospital and hospital providers regarding operational issues and collaborative educational efforts.**	• Form a collaboration panel between WSC Acute Stroke panel and WSC EMS panel for the development of stroke training and protocols for EMS providers across the state. • Mutually determine needs for training and protocol development etc. • Develop training programs and protocols.	WSC EMS panel WSC Acute Stroke panel EMS Advisory Board EMS Physician Advisory Cmte EMS Alliance DPH/Office of EMS	2005-2007

Strategy 2: **Determine and deliver the initial and continuing education needed to provide optimal patient care.**

			Timeframe

#	Objectives	Action Steps	
3.2A	**Support continuing education for EMS providers/responders during educational and training venues across the state.**	• Develop and distribute package to EMS services with "a new protocol, here's a sample and how to evaluate stroke patients." • Seize opportunities for Dan Williams to present to 7-8 major groups over the next year, include 2/3 slides in PPT presentation and provide him with handouts.	2005-07

Goal 4: **Ensure that all patients having signs or symptoms of stroke be transported to the nearest primary stroke center (or hospital with an equivalent designation), given currently available acute therapeutic interventions.**

Strategy 1: **Support the transport of stroke patients to the nearest primary stroke center.**

#	Objectives	Action Steps	Timeframe
4.1A	**Assist in raising awareness of primary stroke centers at the community level (city ordinances) and with EMS medical directors and hospitals.**	• Assist in making changes to city ordinances to support triage and transport destination changes. • Utilize EMS advocates to assist with system change influence.	2005-07

Goal 5: **Ensure that EMS personnel perform and document agreed upon stroke patient assessments and screening of candidates for thrombolysis or other hyper-acute interventions, as such interventions become available.**

Strategy 1: **Ensure that all potential stroke patients be scored and screened for stroke signs and symptoms, time of onset, and contraindications to thrombolytic therapy or other hyper-acute therapies that may become available through completion of forms or other methods (as agreed upon by the local stroke community in collaboration with EMS) to provide written or transmitted data to the receiving hospital.**

#	Objectives	Action Steps	Timeframe
5.1A	**Raise awareness of need and value of EMS personnel performing pre-arrival stroke assessments and documenting patient data and communicating with receiving hospital; provide training.**	• Develop a plan for training EMS personnel and providing resources. • Collaborate with EMS Alliance on education and training.	2005-07

Strategy 2: **Ensure that scoring and screening tools are a part of a comprehensive quality improvement program and be improved and refined as needed.**

#	Objectives	Action Steps	Timeframe
5.2A	**Support the development of comprehensive quality improvement programs in larger metro areas**	• Provide resources and consultation as requested from the Wisconsin Stroke Committee.	2005-07